

REMARKS/ARGUMENTS

Applicant has considered the Office Action dated 14 August 2007 and has amended the claims to more clearly set forth the invention. Claims 1, 16-24 and 26 have been amended by this Amendment. Claims 1-10, 12, 14, 16-24, 26, and 40-56 are presented in the application for further examination. Reconsideration of the application as amended and in view of the following remarks.

This Amendment corrects an error regarding Claim 15 in the Amendment filed January 14, 2008, and adds the amendments to the claims in the Amendments dated February 15, 2008 and February 18, 2008.

Amendments to the Claims

Claims 1-3, 15, 17, 19-24 and 26 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over US3,885,929 (Lyon et al.) in view of GB 2 207 746 (Chen), and claims 5-10 and 18 are rejected further in view of US 6,895,954 (Swierczyna et al.)

The pending claims have been amended to be directed to a self-cleaning kitchen exhaust system and method.

Claim 15 has been cancelled. Claim 16 has been amended to read "cleaning solution" instead of "cleaning liquid" for a proper antecedent basis. Claim 17 has been amended to include the feature of the first fine spray having droplets sized to combine with contaminants to form combined droplets in the air flow before the first filter. New Claims 40-56 have been added.

Claims 20-24 and 26 have been amended to depend on the correct preceding claims.

The Factual Enquiries

The factual enquiries required are:

1. Determine the scope and content of the prior art;
2. Ascertain the differences between the claimed invention and the prior art;
3. Resolve the level of advisory skill in that pertinent art.

A. The Scope and Content of the Prior Art

1. Chen GB 2,707,746

Chen is for kitchen exhausts. It has a first filter 20 and a second filter 21. The sprays 25 for the first filter 20 are located above the first filter and spray downwardly against the air flow and with the force of gravity. The sprays 26 for the second filter 21 are below the second filter 21 and spray upwardly with the air flow but against the force of gravity.

There is a lower panel 10 to collect the outlet from the first spray 25 and the second spray 26. The lower panel 10 has a peripheral drain ditch 105. Air and contaminants pass upwardly through slots 102 in panel 10 in the airflow caused by fan assembly 41. The slots 102 are covered by a trap device 104 supported over and above slots 102 by posts 106. Upright side walls 103 are provided to stop fluid passing downwardly through slots 102.

At page 2 Chen discloses that the large particles of the oily vapour are collected by the first filter 20. The oily vapour containing relatively small particles is then drawn into contact with the water spray curtain from sprays 25 and 26. The water spray

curtain is between the first filter 20 and the second filter 21. The oily vapour is cooled by the water spray curtain, and condenses. The fine oily particles coagulate and become relatively large particles that are collected by the second filter 21. Coagulate means "to change from a fluid to a thickened mass; curdle; congeal". The oily particles collected by the first filter 20 and second filter 21 are washed away by the sprays 25 and 26.

However, at page 6 lines 1 to 13 Chen discloses:

"As soon as the kitchen fumes reach and pass first filter net 20, the remaining relatively large oily particles are caught and collected by first filter net 20. The relatively small oily particles contained in the kitchen fumes which have passed through first filter net 20 encounter water spray curtains formed in space 2 between first filter net 20 and second filter net 21, whereby the oily particles are either cooled to become condensed or merged with water particles. As a result, the oily particles are caused to become relatively large particles which are then caught and collected by second filter net 21 when the kitchen fumes pass through second filter net 21."

At page 4 lines 14 to 19 Chen also discloses that trap device 104 causes kitchen fumes, drawn by fan unit 41 to enter casing 1 through a slot 102, to make an abrupt turn over side walls 103 and side edges of accurate strip 104A. At the same time, water dripping from water spray devices 25, 26 is prevented from dripping through slot 102. At page 5 line 33 to page 6 line 1 this is qualified as: "When kitchen fumes make the abrupt turn, some of the relatively large oily particles are separated

from the stream of kitchen fumes and are dropped onto the upper side of lower panel 10.

In Chen, the relevant disclosure is that fresh water is sprayed onto an upper side of the first filter net 20. Large oily particles in kitchen fumes coming into contact with the bottom of the first filter net 20 are captured by the first filter net 20 and washed away by the fresh water sprays from above. At page 5 of Chen it is clearly stated: "Second filter net 21 is identical with first filter net 20 ...".

2. Lyon et al 3,885,929

In Lyon et al., the relevant disclosure is that fresh water is sprayed against the bottom and top of filter pad 106. This highly wets the pellets in pad 106 so that pad 106 acts as a final transfer or separation stage for any contaminants remaining in the air.

With Lyon the spray from spray outlet 114 is to saturate the final scrubber pad 106. As is described at column 5 lines 6 onwards, a gas burner is used to form SnO_2 , H_2O and HCl . The SnO_2 will be in solid particle form; the HCl will be in gaseous form (see line 20); and the H_2O will be gaseous. Even as it enters duct 33 the air will be at about 350° to 400°F . Water is injected into the air stream by nozzles 50 to cool the air stream to about 140° to 160°F . This rapid cooling effect promotes separation of the pollutants from the air stream (column 6 lines 22 onwards). The HCl gas condenses and falls into bath L. The wet SnO_2 particles agglomerate to form larger particles (i.e. larger particles of SnO_2) that are more easily separated with scrubber 30. At column 7, line 8 onwards, it makes it clear that the liquid in bath L will have fresh water, HCl acid, and solids removed from the air.

HCl gas in the air stream reacts with the entrained liquid to form HCl acid, and the particulate matter becomes highly wetted with the liquid. As a result, most of the contaminants are collected in bath L.

The air also passes through plates 82, 84 and, due to a venturi effect, entrained particles impinge directly against the plates and fall back into bath L.

The most pertinent description in Lyon is at column 8 lines 28 to 61. Lyon has a first filter that is the water bath L. The water bath L removes most of the HCl gas and other contaminants. The air and the remaining HCl gas is then drawn upwardly by the force of fan assembly 36 but against the force of gravity. Scrubber pad 106 extends across the entire cross-sectional flow area of upper section 46. Water sprays 114 are below scrubber pad 106 and direct a continuous pressurized spray of fresh water upwardly against the bottom of scrubber pad 106. Similarly, an upper fresh water spray assembly 118 is mounted above scrubber pad 106 that directs a continuous pressurized spray of water downwardly and against the air flow, but with the force of gravity, against the top of scrubber pad 106.

The scrubber pad 106 is formed by upper and lower perforated polypropylene support grates 110 and 112, and an intermediate filter bed 113 of microreticulated polyester fibrous pellets packed between the grates 110 and 112. As a result of spray assemblies 114 and 118, then pellets in pad 106 are highly wetted and the scrubber pad 106 acts as a final transfer or separation stage for any contaminants (i.e. HCl gas) in the air. The water from assemblies 114 and 118 continuously washes scrubber pad 106, keeping it clean and effective as a final filtering and separating stage.

Demister pad 108 removes the water from the air stream before it enters the housing of fan 36 and is exhausted to the atmosphere. The demister pad 108 is similar to the scrubber pad 106 in that it is also formed by upper and lower perforated polypropylene support grates 122 and 124, and an intermediate filter bed 126 of microreticulated polyester fibrous pellets packed between the grates 122 and 124 and which collects the water as the air passes therethrough.

3. Swierczyna 6,895,954

The Examiner is relying on this citation as it discloses a water bath 14 having a V-shaped bottom 23; and a wall 20 of the water bath 14 that directs the exhaust. A curved baffle 19 extending between two walls above the wall 20 also assists in directing the exhaust. Swierczyna discloses the use of a wall 20 and curved baffle 19 to direct exhaust into the system.

B. The Differences between the Claimed Invention and the Prior Art

1. The Claims as amended and Chen

Claim 1 requires: a first spray upstream of a first filter, and into the exhaust path before the first filter; a second filter downstream from the first filter; wherein the first spray has droplets sized to combine with droplets of a contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter; and a plate mounted below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate.

The first and second sprays of Chen are both after the first filter 20. There is no ability for air flow to draw the first spray along the path onto a first surface of the first filter. Furthermore, Chen does not disclose that the first spray has droplets sized to combine with droplets of a contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter. Also, with Chen air and contaminants pass through slots 102, but this cannot qualify as a filter. Moreover, this is no spray upstream of the slots 102. These slots 102 cause significant clogging by contaminants, such as oil and grease, which reduces air flow and thus the cleaning action. The combination set forth in Claim 1 provides the advantage of cleaning the air of contaminants that are still in the air before reaching the first filter. This minimizes clogging of the first filter and increases the effectiveness of the exhaust operation. As the contaminants are carried by the airflow, so is the cleaning solution. The system of Chen is not operable in this manner.

In Chen, no spray is provided before the first filter 20. Instead, sprays are provided to wash off oily particles that have already been caught by the first filter 20, without any assistance from any spray. The sprays in Chen thus come into use retrospectively, i.e., only *after* the first filter 20 has already filtered the air of contaminants. In contrast, the first spray in the present application combines with the contaminants *before* reaching the filter.

Claim 2 adds the feature that the self-cleaning kitchen exhaust system has a second spray outlet located in the air flow path after said first filter for providing a second cleaning spray onto a rear surface of said first filter. Chen has a second spray that sprays onto the second filter, not the rear of the first filter.

Claim 3 requires that the first spray outlet includes at least one nozzle for providing a fine spray, and a second spray outlet includes at least one further nozzle for providing a coarse spray. This is not taught nor suggested by Chen.

Claim 5 adds structural features including a baffle depending from the top and intermediate the front wall and the rear wall. There is no such baffle in Chen.

Claim 6 requires that the baffle extends between the front wall and the rear wall. Again, there is no such baffle in Chen.

Claim 7 relates to the plate and that the plate extends forwardly from one of the front wall and the rear wall beyond the baffle. Again, there is no such baffle in Chen.

Similarly, in claim 8 the plate has an upwardly directed projection extending between the baffle and the one of the front wall and the rear wall. Again, there is no such baffle in Chen nor any such projection.

Following on from that, claim 9 requires the projection to extend upwardly to a height at least as high as the mounting of the first filter to the baffle. Again, there is no such baffle in Chen nor any such projection.

In claim 10 the spray outlet is mounted on the plate. This is not disclosed nor taught by Chen.

Chen does not disclose nor teach that the first filter is inclined with respect to the path, and covers the path as required by claim 12. In Chen there are spacers 22A so the filters cannot cover the path.

For claim 14, Chen does not disclose or teach that the first filter is at an angle of inclination to the path substantially the same as that of the second filter. The inclination of the filters of the present application and the advantages it gives are clearly stated in

the specification of the present application at the end of paragraph [0036]; and in paragraphs [0039], [0040] and [0043]. If the filters were of the type usually used in kitchen exhaust systems, there would be a considerable risk that the spray would pass through the filter, or would rebound from the filter.

Independent claim 17 requires the first spray outlet to provide a fine, first spray of a cleaning solution into the air flow before the first filter to enable the fine, first spray to be drawn into the first filter by the air flow, wherein the fine, first spray has droplets sized to combine with droplets of the contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter, and a plate mounted below the first filter for collecting the fine, first spray that the exhaust system is operable when cooking is taking place below the first plate. Applicant repeats and reaffirms the comments made in relation to Claim 1.

Claim 18 requires the plate to be mounted below the first filter and to have an upwardly directed projection at an end of the plate. Chen is silent on both features.

Claim 19 is an independent method claim and again requires a first spray into an air flow before a first filter, the first filter being mounted in a path of the air flow to enable the first spray to be drawn along the path onto the first filter; the first spray being able to combine with droplets of the contaminant in the air flow before the first filter; the first spray being able to coat the first filter to assist the first filter in capturing at least one droplet of the contaminant in the air; and a plate mounted below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate.

Applicant repeats and reaffirms the comments made in relation to Claim 1.

In claim 20 the first spray is drawn along the path under the influence of the air flow, and the air flow causes at least a part of the first spray to pass through the first filter. Chen is again silent on this feature.

Claim 23 requires the second spray to clean a rear surface of the first filter, and for being drawn under the influence of the airflow to clean a second filter in said airflow path after said first filter. This is not disclosed by Chen, and cannot be achieved by the construction of Chen.

Claim 24 requires the first filter to be a relatively coarse filter, the second filter is a relatively fine filter, the first spray is a relatively fine spray and the second spray is a relatively coarse spray. In Chen the two filters are the same. Chen is silent about differences between the two sprays.

Finally, claim 26 requires the second spray to substantially coat the second filter to assist the second filter in capturing at least one contaminant. Chen is silent on this feature.

2. The Claims as amended and Lyon

Claim 1 requires: "a first spray outlet for providing a first spray into the air flow before the first filter to enable the first spray to be drawn along the path onto a first surface of the first filter; and a second filter in the path for the air flow downstream from the first filter; wherein the first spray has droplets sized to combine with droplets of a contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter; and a plate mounted below the first

filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate.”

Lyon is not a self-cleaning kitchen exhaust system – it is for scrubbing air not cleaning the air and itself. Lyon doesn't clean the exhaust system. Lyon only removes the gas from the air. It is not and could never be a self-cleaning kitchen exhaust system. The fresh water spray in Lyon is meant to enhance the performance of the pellets in the filter pad 106. There is no disclosure or teaching of the fresh water sprays being designed to act on contaminants while still in the air. Instead, the fresh water sprays are *targeted at the scrubber pad 106* to wet the pellets of microreticulated polyester fiber so that the pellets can perform the removal of contaminant gasses. The fresh water sprays in Lyons et al. are *not targeted at contaminants in the air before the scrubber pad 106*.

Furthermore, Lyon does not disclose that the first spray has droplets sized to combine with droplets of a contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter. Also, with Lyon contaminated fluid drips down into the bath L, and the system practically cannot be used when cooking is taking place. In Lyon, there is no disclosure or teaching of spraying the cleaning solution into the air flow to combine with contaminants even before the contaminants reach the first filter. This feature provides the advantage of cleaning the air of contaminants that are still in the air before reaching the first filter. This minimizes clogging of the first filter and increases the effectiveness of the exhaust operation. It also means that wherever the air goes, the cleaning solution goes, since the contaminants and the cleaning solution are carried by the airflow. In Lyon bath L is

a first filter. Scrubber pad 106 may collect contaminants. Demister pad 108 removes water from the air. Neither pad 108 nor 106 is inclined at an angle to have the mixture of contaminants and fluid run off the pad. Moreover, the air flow of Lyon contains HCl gas as a contaminant, which is inherently not applicable to a kitchen exhaust system.

Claim 3 requires that the first spray outlet includes at least one nozzle for providing a fine spray, and a second spray outlet includes at least one further nozzle for providing a coarse spray. This is not taught nor suggested by Lyon.

Claim 5 adds structural features including a baffle depending from the top and intermediate the front wall and the rear wall. There is no such baffle in Lyon.

Claim 6 requires that the baffle extends between the front wall and the rear wall. Again, there is no such baffle in Lyon.

Claim 7 relates to the plate and that the plate extends forwardly from one of the front wall and the rear wall beyond the baffle. Again, there is no such baffle in Lyon.

Similarly, in claim 8 the plate has an upwardly directed projection extending between the baffle and the one of the front wall and the rear wall. Again, there is no such baffle in Lyon nor any such projection.

Following on from that, claim 9 requires the projection to extend upwardly to a height at least as high as the mounting of the first filter to the baffle. Again, there is no such baffle in Lyon nor any such projection.

In claim 10 the spray outlet is mounted on the plate. This is not disclosed nor taught by Lyon.

Lyon does not disclose nor teach that the first filter is inclined with respect to the path as required by claim 12. For claim 14, Lyon does not disclose or teach that the

first filter is at an angle of inclination to the path substantially the same as that of the second filter. The inclination of the filters of the present application and the advantages it gives are clearly stated in the specification of the present application at the end of paragraph [0036]; and in paragraphs [0039], [0040] and [0043]. If the filters were of the type usually used in kitchen exhaust systems, there would be a considerable risk that the spray would pass through the filter, or would rebound from the filter.

Independent claim 17 requires the first spray outlet to provide a fine, first spray of a cleaning solution into the air flow before the first filter to enable the fine, first spray to be drawn into the first filter by the air flow, wherein the fine, first spray has droplets sized to combine with droplets of the contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter, and a plate mounted below the first filter for collection of the fine, first spray such that the exhaust system is operable when cooking is taking place below the first plate. Applicant repeats and reaffirms the comments made in relation to Claim 1.

Claim 18 requires the plate to be mounted below the first filter and to have an upwardly directed projection at an end of the plate. Lyon is silent on both features.

Claim 19 is an independent method claim and again requires a first spray into an air flow before a first filter, the first filter being mounted in a path of the air flow to enable the first spray to be drawn along the path onto the first filter; the first spray being able to combine with droplets of the contaminant in the air flow before the first filter; the first spray being able to coat the first filter to assist the first filter in capturing at least one droplet of the contaminant in the air; and a plate mounted below the first

filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate.

Applicant repeats and reaffirms the comments made in relation to Claim 1 as they are equally applicable here.

In claim 20 the first spray is drawn along the path under the influence of the air flow, and the air flow causes at least a part of the first spray to pass through the first filter. Lyon is again silent on this feature.

Claim 23 requires the second spray to clean a rear surface of the first filter, and for being drawn under the influence of the airflow to clean a second filter in said airflow path after said first filter. This is not disclosed by Lyon, and cannot be achieved by the construction of Lyon as the demister pad 108 would become waterlogged and ineffective very quickly.

Claim 24 requires the first filter to be a relatively coarse filter, the second filter is a relatively fine filter, the first spray is a relatively fine spray and the second spray is a relatively coarse spray. In Lyon the two filters are the same. Lyon is silent about differences between the two sprays.

Claim 26 requires the second spray to substantially coat the second filter to assist the second filter in capturing at least one contaminant. Lyon is silent on this feature and it cannot be achieved by the construction of Lyon as the demister pad 108 would become waterlogged and ineffective very quickly.

3. Swierczyna 6,895,954

There is no intermediate baffle in Swierczyna as that component selected by the Examiner is the rear wall of the hood assembly. The wall 20 is not a projection of a plate but is a wall of the water bath 14. It doesn't extend forwardly from one of the front wall and the rear wall and most certainly doesn't extend beyond the baffle. The fluid outlet 21 is not mounted to the plate. The Examiner's comments on Swierczyna go directly against the teaching of that citation.

4. Newly Added Claims

Claims 40-56 have been added. Each of Claims 40, 42, and 44 depend upon an independent claim, and recite that the plate forms a boundary for the air flow. Newly added Claims 41, 43, and 45 similarly depend upon an independent claim, and recite that the plate collects combined droplets.

Newly added independent Claim 46 recites a self-cleaning kitchen exhaust system wherein the first spray is drawn toward the first filter, a second filter in the path where the air flow is downstream from the first filter, the first spray is droplet sized to combine with contaminants to form combined droplets in the air flow before the first filter such that the combined droplets are captured by the first filter, a plate mounted below the first filter for collection of the first spray such that the self-cleaning exhaust system is operative when cooking is taking place below the plate, and a drain for draining collected fluid collected on the plate. Dependent Claims 47-50 are similar to previously submitted dependent claims.

Newly added independent Claim 51 is directed to a method of removing at least one contaminant in a kitchen exhaust system, includes providing a first spray into the air flow before a first filter, mounting the first filter along a flow path in the air flow such that the first spray is drawn along the path of the air flow toward the first filter while combining with the contaminant to form combined droplets in the air flow before the first filter, mounting a plate below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate, and draining fluid collected on the first plate. Dependent Claims 52-54 are also similar to previously submitted dependent claims.

Newly added Claim 55 is similar to Claim 46, but does not recite a drain for draining fluid collected on the plate, and instead recites a combination with a second spray outlet located in the air flow path after the first filter for providing a second cleaning spray onto a rear surface of the first filter, and further recites that the first filter is inclined with respect to the path of the air flow. Applicant submits that this combination is neither shown nor suggested by the cited references. Newly added dependent Claim 56 depends on Claim 55 but is otherwise similar to Claim 49.

Newly added Claim 57 is similar to cancelled Claim 15.

C. Person Skilled in the Art

Even after *KSR v Teleflex* one must consider what the prior art, singularly or in combination, teaches a person of ordinary skills in the art. It is therefore helpful to identify the person of ordinary skills in the art for the present invention, and the prior art.

Lyon is a system for cleaning air polluted with metal chlorides and hydrogen chloride gas.

After a first scrubbing operation, the gas passes through a final scrubber pad 106 and a demister pad 108. The final scrubber pad 106 has:

- (a) upper and lower perforated polypropylene support grates 110 and 112, and
- (b) an intermediate filter bed 113 of micro reticulated polyester fibrous pellets packed between the grates 110 and 112.

Lyon is for gaseous contaminants not liquid contaminants. Also, a scrubber pad is vastly different to a filter as envisaged by the present invention. Scrubbers are chemical in operation whereas filters are physical in operation.

A lower fresh water spray assembly 114 is mounted beneath pad 106 and directs a continuous pressurized spray of water upwardly and directly against the bottom of pad 106. An upper fresh water spray assembly 118 is mounted above pad 106 and directs a continuous pressurized spray of water downwardly and directly against the top of pad 106. As a result of the two spray assemblies 114, 118, the pellets in pad 106 are highly wetted and the pad acts as a final transfer or separation stage for any gaseous contaminants remaining in the air. The demister pad 108 removes water from the air and is similar in construction to pad 106. The water of Lyon operates on the scrubber media to change its characteristics. The water of Lyon as sprayed does not act on the contaminants.

The obviousness analysis cannot be confined by overemphasis on the importance of published articles and the explicit content of issued patents. In many

fields, it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends.

Prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations. The "mere existence of differences between the prior art and an invention does not establish the invention's nonobviousness".

The scrubber of Lyon is used during the manufacture of glass bottles. A metallic chloride is sprayed against the external surface of the bottles at a temperature of about 800° to 900°F resulting in the release of HCl gas. The scrubber is to remove the gas.

This is a complex process involving dangerous and highly toxic chemicals, and is performed in a large manufacturing plant at significantly elevated temperatures. The scrubbing processes are also complex. As such, the person of ordinary skills in the art of Lyon would be a chemical engineer of high skill levels in dealing with highly toxic chemicals in large manufacturing plants.

Chen, like the present application, is a kitchen exhaust fan system. Kitchen exhaust fans are normally designed and constructed by mechanical, ventilation or electrical engineers as they have a hood, ducting, fan, filters, and a spray system. Kitchen exhaust systems do not deal with toxic chemicals such as HCl gas, do not require gas scrubbers, and are not in industrial concerns such as factories for manufacturing glass bottles. Kitchen exhaust systems must fit in the headroom above

a stove or the like and are therefore relative compact systems, whereas that of Lyon is for a large manufacturing plant and will be large and complex.

As such, the person of ordinary skills in the art is quite different – mechanical/electrical engineers as against chemical engineers.

D. Obviousness

Lyon is not in the applicant's field of endeavor. Lyon is not in a field of endeavor that is reasonably pertinent to the particular problem with which the applicant was concerned. Lyon is for cleaning a highly toxic gas from air. The present application is for removing cooking contaminants from exhaust air.

When the citations are considered, they cannot be combined according to known methods to yield predictable results due to the inherent differences in the technologies. Also, the combination, even if made, would not give predictable results. The Examiner is suggesting the capturing of the spray by the airflow is inherent. But it isn't to a person skilled in the art of Chen and the present application because spraying when cooking has not previously been possible.

As both Chen and Lyon would cause the cleaning solution, or the cleaning solution with contaminants, to drip onto the cooking surface, they could not and can not operate when cooking was taking place. As such, there would be no contaminants in the air flow with which the spray could combine. There is no predictability of the results required of the claims of the present application.

Similarly, Lyon and Chen would not be performing the same function as if used separately. And the result of the combination would not be predictable as being the present invention as claimed.

There is no simple substitution of one known element of Lyon for another of Chen, or vice versa, to obtain predictable results again due to the inherent differences in the technologies and the inherent difficulties of dealing with the toxic gasses of Lyon.

There is no use of a known technique of Lyon to improve a similar self-cleaning kitchen exhaust system as the problems with the prior art are so profound, to improve them involves unknown techniques, and nor are the results predictable. It would not be obvious to try combining Lyon with Chen due to the unsuitable nature of Lyon for use in a self-cleaning kitchen exhaust system.

Variations of both Lyon and Chen could not produce predictable variants based on design incentives or market forces.

There is no suggestion, teaching or motivation that would have lead one of ordinary skill in the art of the present application to combine the citations to arrive at the claimed invention. They do not mention each other, cite each other, and Lyon is in US classes 55/87; 23/277; and several classes within general class 55. The present application is in US classes 110/215 and 110/206. Chen is in the same broad international class as the present application – F23J. Swierczyna is in US class 126/299 but is in the same international class as Lyon – B01D 47. A person of ordinary skills in the art seeking to solve the problems addressed by the inventor of the present application would not locate Lyon because it is in such an unrelated field of activity that

it could not be found. Also, Lyon is addressing a different set of problems, and requires significant expertise in the handling of highly toxic gasses.

Even if the combination were made, it would still not arrive at the claimed invention as it could not be used when cooking was taking place.

As such, Applicant strongly submits a combination of Lyon and Chen cannot be used for an objection of obviousness under 35 USC § 103.

It is respectfully submitted that the examiner's objections are flawed as a scrubber system for extracting HCl gas could never be used or considered for use in a kitchen where food is prepared for consumption, particularly being operated directly above the appliance on which food is being prepared. The Lyon system is also of a nature that it could not be considered as a kitchen exhaust system due to the physical limitations of size and headroom that exist in all commercial kitchens in locations such as restaurants and hotels. Lyon does not address any of the problems addressed by the present invention, and it would be rejected as irrelevant by a person of ordinary skills in the art of kitchen exhaust systems.

Applicant submits that a full and complete response has been made to the Office action, and Applicant respectfully submits that pending claims are allowable over the cited art and that the subject application is now in condition for allowance.

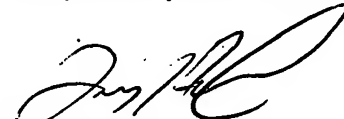
The fact that Applicant may not have specifically traversed any particular assertion by the Office should not be construed as indicating applicant's agreement therewith.

Appl. No.: 10/524,309
Amendment Dated: March 18, 2008
Reply to Office Action of August 14, 2007

Applicant does not believe any fee is due in connection with this Amendment;
however the Commissioner is hereby authorized to charge any deficiency or
overpayment of any required fee to Deposit Account No. 02-4345.

In view of the above, early allowance of the application is requested.

Respectfully submitted,



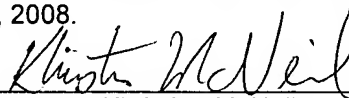
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Date: March 18, 2008

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Khristine McNeil